A. What Is the Modernization Blueprint?

SFA has embarked on a major transformation of federal student financial aid delivery. SFA is pursuing three objectives simultaneously: Customer Satisfaction, Employee Satisfaction, and Lower Unit Cost. Every initiative, project, and task is evaluated for its contribution to these objectives. The key to SFA's modernization is information technology.

The Blueprint is not a detailed plan because information technology is changing, colleges and universities are changing their information technology, and financial aid programs themselves are changing. Rather, the Blueprint is a plan that changes as new opportunities and new challenges arise. The plan has specific initiatives, projects, and activities for the next fiscal year. Some of the projects extend over several fiscal years. Other projects will begin in the future though the schedule is not yet known and others are yet to be defined.

The Modernization Blueprint describes the business requirements, business and technical architecture, and sequencing plan that the Office of Student Financial Assistance (SFA) will use to transform the SFA system using leading edge technology. The Blueprint is just the first step in an on-going process. These elements, shown in Figure II.A-1, provide the focus, framework, and actions needed to make the SFA vision a reality.
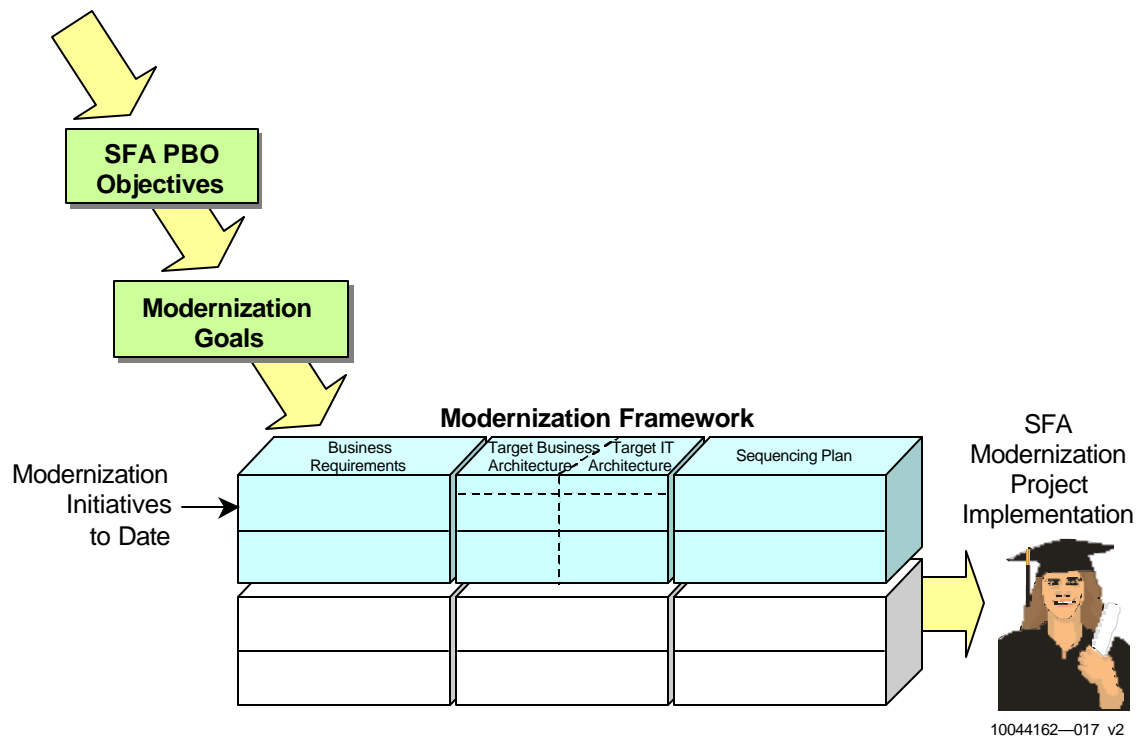

Figure II.A-1. The Modernization Plan

The Modernization Plan begins with business requirements because of the shift in focus from financial aid programs to delivery of service to students. These business requirements are provided in Chapter III and reflect the process changes needed to meet the three objectives. The Business Requirements, in turn, lead to Business Architecture and Information Technology Architecture described in Chapter IV. This chapter defines a series of initiatives and projects, which are described and sequenced in Chapter V. This relationship is shown in Figure II.A-1, The Modernization Plan.

B.   Objectives of the Modernization Blueprint

This Blueprint has seven main objectives. Though these objectives are distinct, all are related and together complete the modernization goal.

The Blueprint:

✦ Summarizes SFA's vision to better serve students and families, and revolutionize the way the nation's investment in higher education is managed.

✦ Defines changes to the Business and Technical Architecture that will permit SFA to meet its objectives.

✦ Explains how information technology (IT) will enable SFA to provide exceptional service to students and families, educational institutions, the financial community, and other partners.

✦ Describes the order in which SFA modernization activities will be performed, both to achieve rapid, dramatic, early results, such as Web pilots, and to invest in infrastructure changes with long-term benefits, such as the creation of a master student record.

✦ Supports management's three-year focus of resources on projects that will have the greatest positive effect on customer satisfaction.

✦ Measures SFA's financial performance and provides efficient and accurate recording and reporting of information.

✦ Provides an initial framework for establishing performance based requirements to measure customer satisfaction, employee satisfaction and unit cost.

C.   Organization of the Modernization Blueprint

The Modernization Blueprint Framework (shown in Figure II.C-1) outlines the way in which the Modernization Blueprint is organized. The current version of the Blueprint includes Levels I and II of the framework. This is the *Universal Architecture*, or target view of the SFA modernization plan. Level III, the *Subrelease Architecture*, is provided for a subset of functionality known as Release 1.0. The chapters of the Blueprint follow the main structure of the Modernization Framework, and the beginning of each chapter indicates the portion of the framework described in that chapter.

The Chapters included in the Blueprint are as follows:

✦ **Chapter I: Executive Summary** – introduces SFA's vision of modernization for student financial assistance and the framework for the Modernization Blueprint that will enable SFA to achieve this goal.

✦ **Chapter II: The Modernization Blueprint Framework** – provides an overview of the Modernization Blueprint and its components.

✦ **Chapter III: Business Requirements** – describes the SFA business requirements that are allocated to processes and subprocesses. These requirements are also presented from the external perspective of students, educational institutions and the financial community.

✦ **Chapter IV: Business and Technical Architecture** – describes the business and technical architecture that must be in place if SFA is to meet its requirements. The business architecture is described in process flows (how processes and subprocess interact). The technical architecture is described in the following pieces: applications, database, data management, and technical infrastructure (hardware, software, system services, networks). The business and technical architecture linkages are clearly explained. The architecture supports various alternatives and its open system approach allows for variability and change.

✦ **Chapter V: Modernization Sequencing Plan** – describes how modernization activities are grouped into initiatives, projects, and phases. Also, the chapter explains how these phases of projects are sequenced over time. The sequencing plan depicts the first three years of a continuing process of modernization.

	Modernization Requirements	Modernization Architecture		Modernization Sequencing Plan
		Process	Technical	
Level I	Business Process Requirements	Process Flows	*Systems*	*Program System Sequencing*
Level II	Business Subprocess Requirements	Subprocess Flows	*Subsystems*	*Subsystem Sequencing*
Level III*	*Subrelease Requirements*	*Subrelease Design*		*Subrelease Planning*
Level IV*	*CI Requirements*	*CI Design*		*CI Development Planning*

* Levels III and IV of the Modernization Blueprint framework are not described in this document   10044162—019
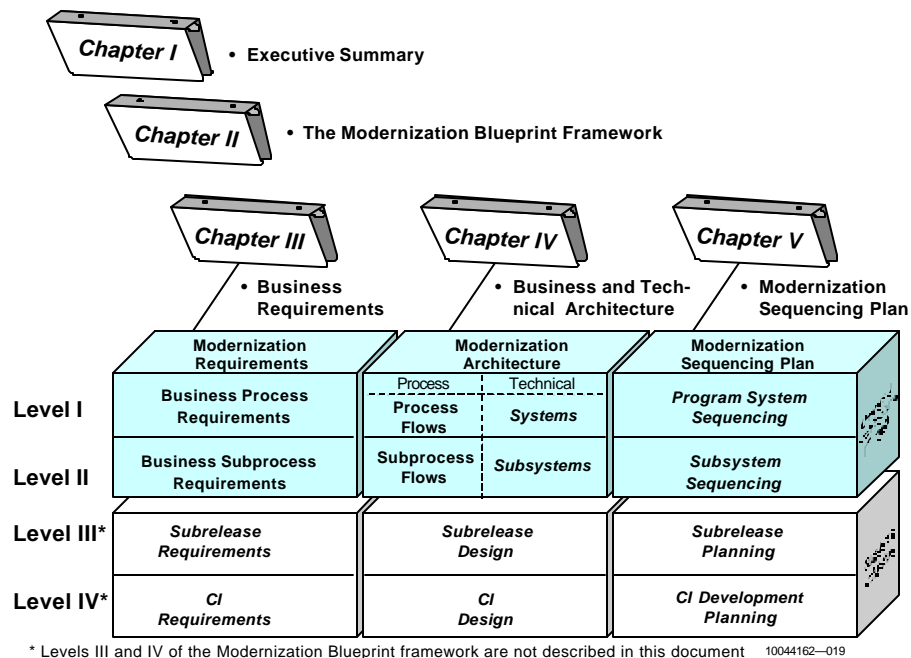
Figure II.C-1. Modernization Blueprint Framework

This Blueprint is written to address both technical and non-technical audiences. Individuals who desire a high-level description of the Blueprint can turn to Chapters I and II for an overview of SFA's Performance Based Organization (PBO) and Modernization Framework. Those interested in a more detailed look at SFA's approach to modernization can read Chapters III through V, which provide specific and technical descriptions of our business requirements, architecture, and sequencing plan.

The three principal components of the Modernization Framework, covered in Chapters II through V, are explained in greater detail in Figure II.C-2.
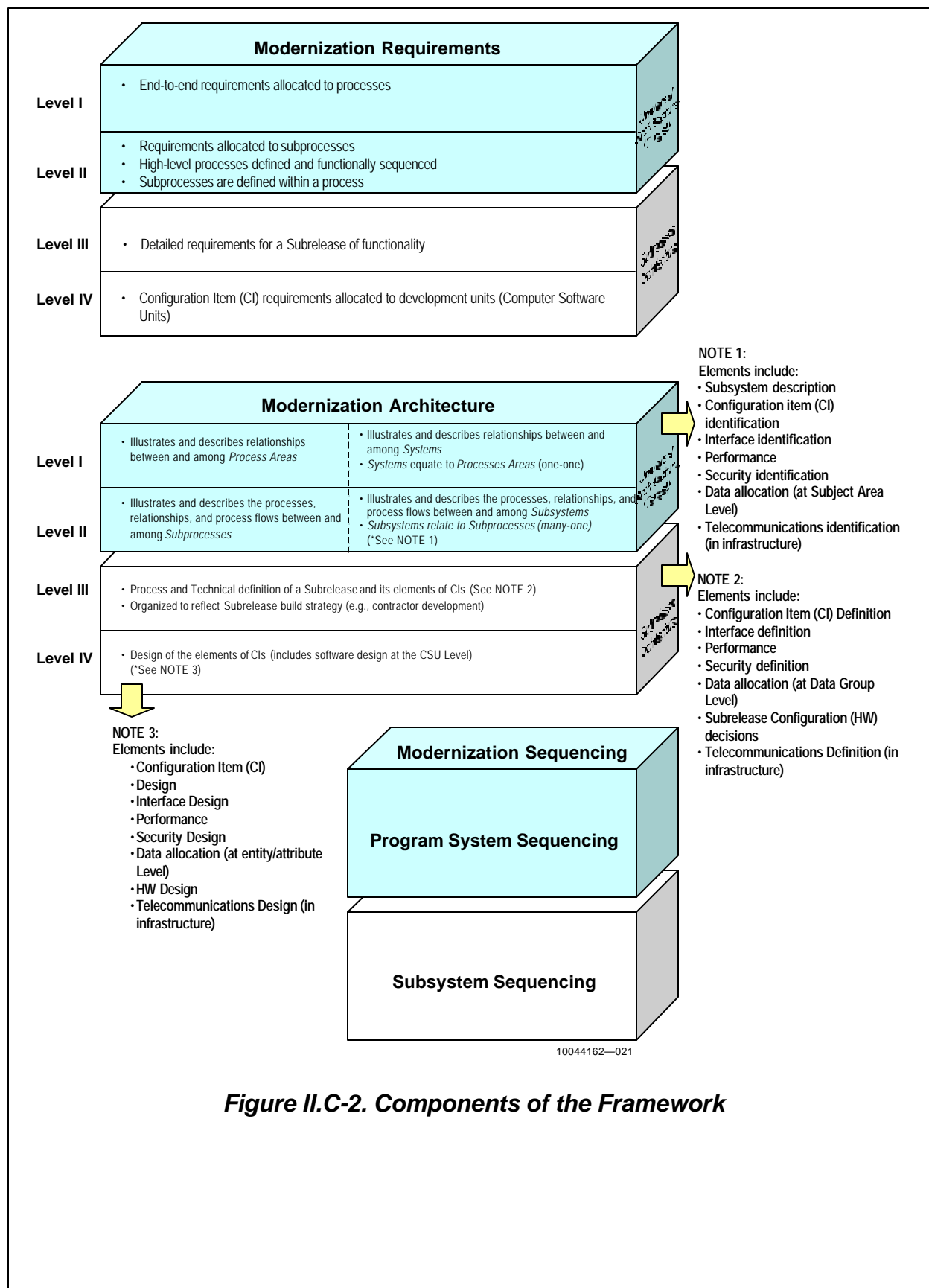
Modernization Requirements

Level I	· End-to-end requirements allocated to processes
Level II	· Requirements allocated to subprocesses · High-level processes defined and functionally sequenced · Subprocesses are defined within a process
Level III	· Detailed requirements for a Subrelease of functionality
Level IV	· Configuration Item (CI) requirements allocated to development units (Computer Software Units)

Modernization Architecture

Level I	· Illustrates and describes relationships between and among *Process Areas*	· Illustrates and describes relationships between and among *Systems* · *Systems* equate to *Processes Areas* (one-one)
Level II	· Illustrates and describes the processes, relationships, and process flows between and among *Subprocesses*	· Illustrates and describes the processes, relationships, and process flows between and among *Subsystems* · *Subsystems* relate to *Subprocesses (many-one)* (*See NOTE 1)
Level III	· Process and Technical definition of a Subrelease and its elements of CIs (See NOTE 2) · Organized to reflect Subrelease build strategy (e.g., contractor development)	
Level IV	· Design of the elements of CIs (includes software design at the CSU Level) (*See NOTE 3)	

NOTE 1:
Elements include:
· Subsystem description
· Configuration item (CI) identification
· Interface identification
· Performance
· Security identification
· Data allocation (at Subject Area Level)
· Telecommunications identification (in infrastructure)

NOTE 2:
Elements include:
· Configuration Item (CI) Definition
· Interface definition
· Performance
· Security definition
· Data allocation (at Data Group Level)
· Subrelease Configuration (HW) decisions
· Telecommunications Definition (in infrastructure)

NOTE 3:
Elements include:
· Configuration Item (CI)
· Design
· Interface Design
· Performance
· Security Design
· Data allocation (at entity/attribute Level)
· HW Design
· Telecommunications Design (in infrastructure)

Modernization Sequencing

Program System Sequencing

Subsystem Sequencing

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Figure II.C-2. Components of the Framework

Consistent with the Modernization Framework, the output from each chapter serves as input to subsequent chapters of this Blueprint. This concept is shown graphically in Figure II.C-3. The major results of each chapter are building blocks that, together, comprise the overall SFA Modernization Plan.
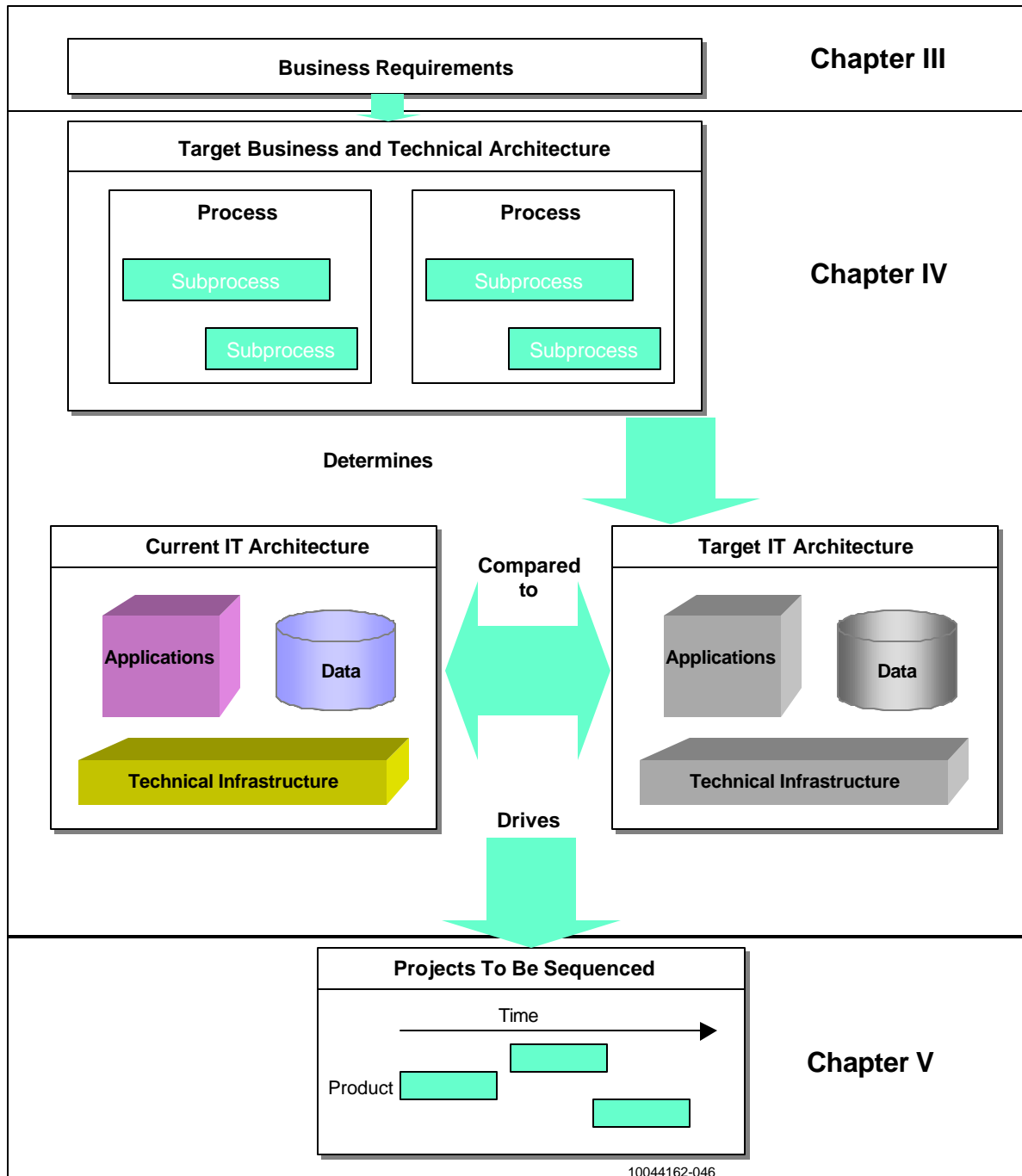

Figure II.C-3. Each Chapter of the Blueprint Is a Building Block for Developing the Modernization Plan

Performance Measurement is critical to SFA's goal of becoming a PBO. It establishes performance goals, determines the measures or metrics associated with measuring progress against these goals, reports on the success in meeting these goals and adjusts or changes policy or program directions to better support SFA strategies and objectives. A three-tier performance management framework was created to define the different levels (e.g., number, type, and complexity) of performance measures supporting SFA's core business processes and functions. Goals and metrics will be established using a top-down/bottom-up approach focusing on these three tiers: Organizational, Management, and Process/Activity. In addition, metrics will directly and indirectly support the PBO's three core objectives of customer satisfaction, employee satisfaction, and unit cost reduction. Metrics will be developed to measure the progress of the Modernization project against these objectives. Figure II.C-4 represents a possible tool that can be used to generate metrics supporting the performance based requirements. By populating the matrix with targeted measures and metrics, SFA can gauge its success for the major processes and functions of SFA's target business model (in accordance with the PBO's three performance objectives). While metrics will actually be established in a separate strategic initiative (the SFA Performance Plan), it is clear that they will be grounded in the processes and functions of the Modernization Blueprint. The Modernization Blueprint will also provide the business requirements (Chapter III) and the technical infrastructure (Chapter IV) to support easy and rapid implementation of the metrics that are put in place.

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Figure II.C-4. Framework for Performance Metrics

A performance metrics framework will drive SFA towards consistent business results. By localizing and internalizing these metrics and measures at each level of the

organization, every individual at SFA will understand how his/her effort supports the goals of his/her department and the PBO at large. The top-down/bottom-up development of a performance measurement process with defined goals, measures, and feedback mechanisms is essential to an effective PBO. Once the performance measurement process is in place, continuous tracking and fine tuning will be required to ensure SFA's commitment to this effort. Initial goals and metrics in support of this effort will be reflected in the SFA Performance Plan in September.

D.   Changes in This Edition of the Modernization Blueprint

The Business Requirements represent a series of decisions being made by the Channel and Enterprise Managers. Some initiatives have been added to those in the 1999 Modernization Blueprint and some have been consolidated or cancelled.

Comments on the Modernization Blueprint

During the Comment Period for the April 7, 2000 draft, three organizations and one individual commented on the Blueprint. The National Council of Higher Education Loan Programs provided a list of specific questions and suggestions from their members. The Consumers Bankers Association expressed the concerns of their members. The National Association of State Student Grant and Aid Programs urged additional coordination with state programs.

Many of the questions were answered by SFA COO and Channel General Managers at the Town Hall Teleconference held April 27, 2000. Responding to these suggestions, changes have been made to the April 7, 2000 draft.

Expansion of the Software Developers' Conference and the forthcoming Extranet will provide additional current information on the implementation of the Blueprint. Changes to the Blueprint make clear members of the financial aid community will participate in the Integrated Product Teams. As part of the re-engineering processes, the "data dictionary" of current systems is nearing completion and will guide integration of these systems. This project is nearing completion.

SFA continues to seek guidance on data exchange among partners. SFA continues to support NACHA, monitors standards in the financial industry that may be applicable, and encourages standards contributions from the community.

SFA is coordinating with the Department of Health and Human Services and hopes to have health professions loan data available for schools to eliminate the need for financial aid transcripts for students with health professions loans.

SFA is reviewing initiatives and projects to better understand how to accommodate the suggestions made by NASSGAP for state grant and aid programs. Additional information will be provided in the next edition of the Blueprint.

Form of the Modernization Blueprint

After reviewing the April 7th draft, several commenters suggested changes to the format of the next Modernization Blueprint. School representatives at the Town Hall Teleconference thought the Executive Summary was especially useful and the content and format of it should be retained.

Since the detail of the Integrated Product Teams will soon be available on the Extranet, commenters suggested Chapters 3 and 4 could be omitted since the detail should be available for those who have interest or need for this information. Similarly they suggested Chapter 5 be shortened to a summary of the projects and their status. The Modernization Blueprint serves many different purposes for the different readers. Some require the detail that is included in Chapters 3, 4, and 5. Experience with dissemination using the Extranet may suggest some changes in future editions of the Modernization Blueprint.

Business Requirements

One of the four major processes for School Services has changed. The business processes are shown in Table II. D-1.

Table II.D-1. School Services Business Processes

1999	2000
Program Eligibility	Program Eligibility
Program Support	Program Support
Aid Origination and Disbursement	Common Origination and Disbursement
Financial Transactions	Financial Transactions

Common Origination and Disbursement is an initiative to redefine the processes for Pell Grant, Direct Loan and campus-based programs, so a school has a single simplified process for all three programs. The subprocesses are described in Chapter III. Section C under Common Origination and Disbursement. These include application, eligibility, determining the aid package, communiction of disbursement, resolving rejected records, pre-disbursement eligibility checks, disbursement, and closeout/reconciliation. The Sub-Processes and Business Requirements will change to

reflect the current view of Common Origination and Disbursement. As the community has the opportunity to comment on this Business Process, additional changes are likely.

Business processes and subprocesses for Financial Partners and Enterprise Services remain unchanged from the 1999 edition.

Business and Technical Architecture

The Business Architecture, detailed in Chapter IV, is essentially unchanged. Three sections have been added to the Technical Architecture. These are approaches to configuration management, system integration and testing, enterprise deployment. The Aid and Disbursement process is being replaced with the Common Origination and Disbursement process. In Chapter IV Section B.5, Level II SFA Enterprise Conceptual Data Model – Subject Areas, the Aid Awards subject area has been added. The Aid Program services of the Level II Conceptual Model were consolidated with others.

Consistent with discussions with the community, Business Requirement AA-05 Manage Aid Package has been changed so the aid award package rather than the details would be made available to SFA from schools. Business Requirement OD-16 Manage Lender Disbursement Information has been expanded to show more of the participants in the subprocess.

In Chapter IV Section D, the concept of "middleware" was replaced by Enterprise Application Integration (EAI) with a description of how integration of the disparate systems and databases will be achieved. Integration Architecture Services is shown in several figures following its introduction. These figures depict Integration Architecture Sevices with different applications, databases and systems.

The Privacy Architecture section now contains a security framework to ensure information security and to protect the business assets of SFA.

The use of Enterprise Application Integration for parallel development, improved customer service, and improved asset utilization is now described in Chapter IV Section H.

A description of Enterprise Configuration Management has been added in Chapter IV. Section J, Enterprise System Integration and Testing in Chapter IV. Section K, and Enterprise Deployment in Chapter IV. Section L.

Initiatives and Projects

Within Chapter V, Sequencing Plan, some projects for Student Services have been eliminated or consolidated. For the 2000-2001 fiscal year, the pilot project to collect financial aid packaging information has been eliminated based on community comments. References to the single student account have been changed to the student portal—which will produce information as a single student account (See Business Requirements AW-01, 02, 03 and 05). Borrower Tracking Strategy has been consolidated with projects. Debt collection has been deleted from the Analysis of Servicing, Business Requirement LR-04. The 2000-2001 NS 2001-2002 project to Simplify Paper Application Process has consolidated with others to achieve earlier results. Similarly Online Eligibility AA-02 and AA-03 has been consolidated for the same purpose.

Many of the Financial Management Architecture Changes in Chapter V Section E have been moved to or consolidated with, those of Chapter V. Section A through Chapter V. Section D reflecting the need for financial transaction processing in those areas.

A summary of the Status of 1999-2000 Projects is given in Table II. D-2 Summary of the Status of 1999-2000 Projects.

Table II.D-2 Summary of the Status of 1999-2000 Projects

1999-2000 Projects (as reported September 30, 1999)	Status
Personalized Student Web Page	"Students.gov" has been subsumed into the future students portals and includes three major concepts: • Capability to make on-line changes to FAFSA on the web • NSLDS can be directly accessed by students on the web • Major upgrade to Direct Loan student website (March 25, 2000)
On-Line Help Wizard	In Process. This is a feature of the schools portal that we are currently building and will become part of the students portal in the future.
Complaint Cherishing System	Completed
Online Financial Planning Tools	See Enterprise Information System (EIS)
Data Center Consolidation	Near completion
Data Center Intranet	Completed

1999-2000 Projects (as reported September 30, 1999)	Status
Single Student Account	Incorporated into the Common Origination and Disbursement initiative
All Enrolled Data	Agreement with the National Student Loan Clearinghouse
Digital ID	See Students Channel for use with student access and Financial Partners for FFELP pilots.
Financial Management System	Under Chief Financial Officer (CFO)
Flexiplace Upgrade	In process, see improved organizational and human performance projects
RFMS In Place	Completed
FAFSA Corrections on the Web	Many available, others in process
Direct Loan Exit Counseling Material	Completed
Electronic Billing Infrastructure	Incorporated into the Direct Loan Reengineering project.
Web-Based Technical Assistance	Two ways this has been done. IFAP on the web and SFA Technology.
Direct Loan Consolidation (Certificate/ACH Payment)	In process, see Direct Loan Consolidation Re-engineering
Host Computer Access Layer	In process, see Enterprise Integration
Access America, Phase I	See Highway 1 project for student access to personal financial aid data. See Access America Website for information for students. See Loan Servicing and Loan Consolidation under the Students Channel for additional on-line student services.
Mentor Program	See Enhanced Service Delivery for Financial Partners
Electronic Yellow Pages for SFA	In Process. This is an employee focused intranet that currently focuses on enhanced customer service. This tool will allow SFA employees to forward all calls to the appropriate person.
Travel System for SFA Employees	In Process
Intranet for SFA Employees	Completed
Technical Training for SFA Employees	See SFA University

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